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PLANNING GUIDELINES FOR THE CALIFORNIA DESERT PROGRAM

PREPARED FOR

CALIFORNIA STATE OFFICE

BUREAU OF LAND
MANAGEMENT

JANUARY 1971

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Prepared for

BUREAU OF LAND MANAGEMENT

By

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DAVID E. LILIENTHAL
PRESIDENT AND CHAIRMAN

January 29, 1971

Mr. J. Russell Penny
State Director
Bureau of Land Management
Federal Building
2800 Cottage Way
Sacramento, California 95825

Dear Mr. Penny:

We are pleased to submit to the Bureau of Land Management this report entitled "Planning Guidelines for the California Desert Program" pursuant to Contract Number 53500-CTI-56 (N) of August 28, 1970.

Development and Resources Corporation fully endorses your concern for the exigent need for protection of the California desert environment. The uncontrolled uses of the desert are causing irreparable damages to its resources. Thus it is imperative that a comprehensive plan for desert management be immediately formulated. We believe this report will provide the planning guidelines necessary for the development of such a plan.

The report was prepared under the overall direction of Mr. Harald Frederiksen as Program Manager and me as Study Leader. Assistance was provided by Mr. Darryl Davis and special consultation by Mr. William E. Warne. We acknowledge the important contributions by you and your staff which were essential to this report. Special recognition is given to Dr. Dillard H. Gates of your staff who made extensive contributions to the investigation and the preparation of this report.

We hope our report will provide the basis for the development of a comprehensive plan for management of the California desert.

Sincerely,

Tuck Kamine
Deputy Director for Engineering

Enclosures

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Technical supplements prepared by the
Bureau of Land Management are included
in a separate appendix to this report.

INTRODUCTION

The California Desert - A Critical Environmental Challenge, published in January 1970 by the California State Office of the Bureau of Land Management sets forth the problems of use and management of the California desert. This report points out the unique character of the California desert. The California Desert is the only desert in the world with such a vast array of desirable characteristics and it is adjacent to a large population with the affluence, mobility, leisure time and desire to make use of it. The degradation of the desert environment resulting from carelessness and overuse is emphasized and steps that must be taken to reverse the present trends and to enhance and restore environmental quality are presented. In addition, Technical Supplements, published October 1969, gives the status of current information concerning desert resources and their uses. The two documents together provide the basis for a program of action that will result in plans for wise future management of the California desert.

Figure 1 shows the boundaries of the California desert as envisaged in this report. There are over 12 million acres of public domain included within these boundaries. This represents an increase in size over the area set forth in The California Desert report. The increase is a result of incorporating additional lands with desert characteristics within the Bakersfield district and along the Colorado River. These areas were added to the California Desert Program to reflect common desert characteristics, to meet projected demands on desert resources and to add to overall efficiency of resource inventory and analysis techniques.

The California Desert states that, "It must be the goal of the Bureau of Land Management to meet the major predicted needs of the 1980's for the California desert and its resources with full understanding of, regard for, and protection of its environmental values. The accelerating increase in demands for the use of the desert will require a major program of investment and management. If this goal is to be met, two vital steps must be taken in the immediate future." These steps are identified as (1) data collection and comprehensive planning and (2) immediate critical management action.

This report endorses and supports the concept presented in The California Desert. In addition it provides a mechanism and suggests a planning process consistent with the Bureau Planning System for achieving management goals defined in this document. This report consists of deliberately planned segments, each contributing directly to development and implementation of a California Desert Plan, which will provide the information base for and will culminate in a plan for management, development, and use of the desert

ecosystem. The planning effort also will recognize the critical need for interim management to protect irreplaceable desert resources now in danger of destruction and will propose programs to accomplish this end concurrently with preparation of the Desert Plan.

In early years of the California desert, natural resources were exploited primarily for economic gain. The mineral wealth of the desert was and continues to be a major source of revenue. Livestock grazing on a limited scale, where conditions permit, also contributed to the local and state economy. In other cases, the California desert served more as a barrier or obstacle to be overcome than an asset. However, in many instances it has been subdued, if not overcome, and is now criss-crossed with roads and trails and rights-of-way for highways, powerlines, pipeline and aqueducts. Successful users of desert resources have modified its often harsh environment but in turn have been modified by it.

In addition to economic and commercial uses, in recent years the California desert has been increasingly exposed to a multitude of other uses which are best classed as recreational and aesthetic. It is these uses that are changing the face of the desert even more rapidly than commercial uses. The fragile desert ecosystem is being subjected to a new set of uses that place additional stress on a delicately balanced environment.

During summer months the desert environment is harsh or even hostile to the human visitor. But during other seasons, people from the affluent, mobile society of the congested, smog-filled, Los Angeles basin "flow" out onto the desert to relax, to recreate, to breathe the clean air, and to "recharge" themselves for another assault on the asphalt jungle in which they live and work.

The myriad of uses to which the desert is being subjected is causing and will continue to cause ecological, economic, and social changes and conflicts. If the desert ecosystem is to survive, the long-run uses must be compatible with the ecology of the desert. In addition, goods and values supplied by desert resources must be evaluated in both economic and social terms in order to determine the contribution of each use or combination of uses and thus provide a mechanism for resolving land-use conflicts. A full evaluation of desert resources will include ecological, sociological, and economic considerations. Proper allocations of land use or resolution of land-use conflicts will depend in part upon the appropriate blend of these three considerations in terms of the objectives to be achieved in order to reach goals set by society.

The fact that the California desert received over five million recreational visitor-days of use in 1968 is an expression of its great social impact. The projection that, with development, it will be subjected to an excess of 50 million visitor-days of use by the year 2000 is an indication of its increasing social and economic significance. This social impact (extra-market value) must be studied, evaluated, and insofar as possible, quantified and measured.

Extra-market values of aesthetics and recreational use of the California desert are very real but difficult to measure. Values for these activities have not been established in the marketplace. Despite this fact, it is obvious that extra-market values exist and these values are increasing as more people use the desert and as desert resources are diminishing or being degraded by uncontrolled use.

Controlling the use and protection of desert resources involves land-use allocations that hopefully will be based on rational choice. Rational choice can be made only following full consideration of both market and extra-market values of all resources under consideration. Certainly in some cases conflicts will arise between what can be termed preservation values and development values. Land-use allocations, properly made, will take into consideration the preservation values lost if the decision is to develop or the development values foregone if the decision is to preserve. Development, as used here, does not necessarily mean buildings or other structures but includes uses of the desert that damage or destroy desirable wildland or natural characteristics.

The concern for natural beauty, outdoor recreation and environmental quality expressed in California and throughout the nation is clear evidence that the public is willing to pay for extra-market values of preservation or conservation of desert and other resources. Economists and other social scientists must become part of resource planning and management teams if all values are to be properly evaluated.

Segments making up the planning document for the California Desert Plan are (1) concept, (2) outline, (3) staff organization and structure, (4) activities schedule and planning network, (5) interim critical management needs, and (6) budget estimates. Each segment is discussed in detail to show its inter-relationship with other segments and to insure clarity and continuity throughout the report.

In addition to the segments of the planning document enumerated above, this report includes, as appendices, supplemental statements furnished by BLM staff. These statements consist of (1) ADP Support Program (Appendix A), (2) Pilot Resource Inventory Report (Appendix B), (3) Way-Station Report (Appendix C) and (4) Protection Report (Appendix D).

SCOPE OF REPORT

This report, submitted to the BLM California State Director on January 29, 1971, makes reference to and discusses in some detail all recognized essential elements of the California Desert Plan.

Budgets and staffing schedules were prepared and activities discussed to reflect two levels of effort: (1) Optimized Plan Development Program, and (2) Extended Plan Development Program. The optimized plan portrays the job to be done and is consistent with the staffing and schedule of activities to accomplish the job efficiently and within a time period reflecting the urgency of problems of the California desert. The extended plan would accomplish the same job with a smaller staff but over a longer period of time. It is presented as an alternative to the optimized plan, recognizing that continued inaction contributes to further damages or losses of irreplaceable resources of the desert environment.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DESERT PROGRAM AREA
CALIFORNIA

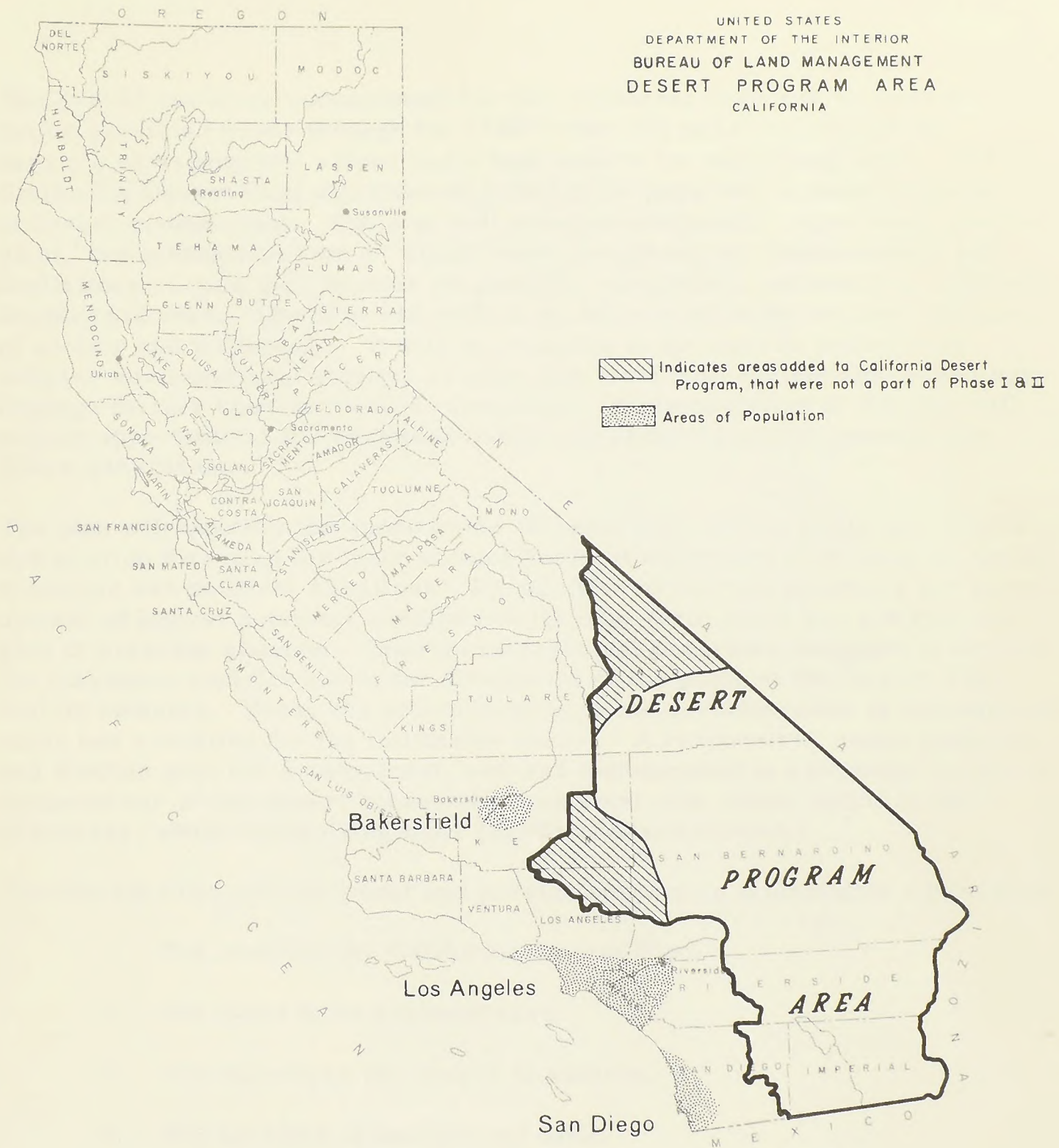


Figure 1

CHAPTER I

CALIFORNIA DESERT PLAN CONCEPT

The goal of resource management for the California desert is to meet the major predicted needs through the 1980's with full understanding of the desert's environmental values and a high regard for protecting them. The California Desert Plan will meet this charge by providing a sound program of desert management. The plan will amalgamate people, resources, government, and institutions into a "whole" that recognizes the requirements and limitations of each and, insofar as possible, minimizes and resolves conflicts among land uses. The plan will reflect an awareness of the dynamic nature of society and technology. It will be sensitive to the need to protect and enhance environmental quality, as spin-offs from both society and technology impinge further upon the desert ecosystem. Implementation of the plan will assure opportunities for continued public use of the desert by present and future generations.

The plan will quantify the scope of the Desert Plan, record goals and objectives and provide direction for their accomplishment consistent with existing social, economic and political situations. Recognition of current problems and development of logical solutions consistent with long-term goals are a legitimate part of program planning. Interim management programs designed to provide the maximum contribution to the attainment of the goals of the Desert Plan will be initiated. Thus, the plan will become the documentation of management plans and activities for the California desert. A responsive, comprehensive, and flexible plan for development, use and management is necessary to assure optimum use of the desert ecosystem consistent with conservation of the resources, while recognizing their fragile characteristics.

The Desert Plan will document and provide supporting information concerning:

1. The need for the California Desert Plan.
2. The goals to be accomplished.
3. The objectives the plan is to achieve.
4. The desert's resources and uses.
5. The allocation of desert resources among present and potential users and criteria to serve as the basis for resource allocation.
6. The interrelationships of various levels of government, agencies, institutions, and individuals as they pertain to the desert.

7. The activities and time sequence necessary to meet objectives of the plan.
8. The information base necessary to implement the plan.
9. The means for management to accomplish its objectives, including coordination of all recognized activities.
10. The value to society of managing the desert according to plan.
11. The development of a program of continuing research and study.

The Desert Plan will be developed utilizing the following premises as guidelines.

1. Use of the desert is increasing at an accelerating rate. Much of the present use of the desert is uncontrolled and destructive of fragile desert resources. To assure continued availability of desirable desert characteristics for present and future generations, a comprehensive plan of development, use, and management is imperative.
2. The BLM has the authority and responsibility for managing that part of the desert ecosystem included within the public domain to:
 - a. Provide for the public welfare and well-being.
 - b. Enhance and improve environmental quality.
 - c. Meet local, state and national goals of social and economic development.
3. Components of the plan must be implemented immediately, prior to the completion of studies.
4. The plan must encompass all of the 24 million acres within the California desert area, 12 million acres of which is included in the public domain.
5. Maximum usefulness of the plan can be achieved only through user and public involvement in all phases of the plan's development and implementation (plan with the people, not for the people).
6. The Desert Plan will be fully coordinated with planning units of other governmental subdivisions whose planning functions interface with those of the BLM.

7. The plan will be comprehensive but will provide sufficient flexibility to allow for modifications as new and pertinent information becomes available. Periodic revisions of the plan will be necessary.

DISCUSSION OF THE CONCEPT*

The goal of resource management for the California desert is to meet the major predicted needs through the 1980's with full understanding of the desert's environmental values and a high regard for protecting them. The California Desert Plan will meet this charge by providing a sound program of desert management.

This concept presents a broad goal of resource management and proposes a time frame consistent with realistic planning projections for the California desert. Use of the desert ecosystem is increasing at an accelerating rate. Recognition of the effects of increasing uses is imperative now if effective planning is to result, but precise planning involves the interaction of change and time. Thus, very long-range planning projections are of limited value for the complex and dynamic desert ecosystems. Projections of 20 years will about reach the limit of utility for the present.

The program of desert management will reflect the plan. The requirement for practical management will incorporate into the plan the factors of environmental values, changing needs and time.

The plan will amalgamate people, resources, government, and institutions into a "whole" that recognizes the requirements and limitations of each and, insofar as possible, minimizes and resolves conflicts among land uses.

The plan will portray individual and institutional human desires in terms of their impact on desert resources. It will show that attainment of some human desires is limited by the physical and/or biological characteristics of segments of the desert ecosystem. A program to recognize the limitations of resources and to resolve conflicts in instances where incompatible uses of desert resources are proposed will be a vital function of the planning. For successful implementation of the plan, it will be necessary to accept the idea that both people and resources contribute to the "whole" of the desert ecosystem that must be managed.

*Underlined statements constitute the core elements of the concept.

The plan will reflect an awareness of the dynamic nature of society and technology. It will be sensitive to the need to protect and enhance environmental quality, as spin-offs from both society and technology impinge further upon the desert ecosystem. Implementation of the plan will assure opportunities for continued public use of the desert by present and future generations.

Changes in society will be reflected in changing uses of desert resources. The plan must have sufficient flexibility to accommodate future uses of the desert that may not be envisioned in the initial planning process. The plan will recognize that changes in society and technology that impact the desert may be either good or bad both for people and for the desert. Thus, of necessity, the desert plan must present means for evaluating changes, problems, alternatives and programs that continue to enhance and protect the environmental quality of the California desert. The plan may point to the need for some restraints, and it may reveal even more clearly that continued unplanned use will apply the ultimate restraint of rendering the desert useless in the future. It will provide the basis for acceptable, sound programs for management.

The plan will quantify the scope of the Desert Plan, record goals and objectives and provide direction for their accomplishment consistent with existing social, economic and political situations.

The bounds or limits of the Desert Plan are set. Elements of the Desert Plan will be identified, evaluated and discussed. National, regional and state goals, as they relate to the Desert Plan, will be presented and discussed. Where goals have not been specified, they will be set forth. The fundamental belief in goal orientation is that planning for California desert resource utilization must be guided by the desire to achieve specific public goals. Goal establishment represents the highest order of public achievement. It serves as the best guide to the interests of the people using the desert in determining desert resource allocation and priorities for land use decisions.

Recognition of current problems and development of logical solutions consistent with long-term goals are a legitimate part of program planning. Interim management programs designed to provide the maximum contribution to the attainment of the goals of the Desert Plan will be initiated. Thus, the plan will become the documentation of management plans and activities for the California desert.

The needs and responsibilities for desert ecosystem management continue concurrently with plan development. Problems concerning desert resource misuse, degradation, and destruction have been identified, though their extent needs further study. Solutions to problems where they are starkly

apparent cannot await development of plans for management of the entire California desert. Without immediate action programs, some fragile and irreplaceable resources, including rare and endangered plant and animal species, will be lost forever. Future generations will be deprived of a part of the heritage that is rightfully theirs. Action programs designed to reverse destructive trends and to protect and preserve rare and endangered species are a part of the Desert Plan. These programs are structured so as to become a part of and to strengthen the overall Desert Plan. Thus, some phases of implementation become an inseparable part of the plan.

A responsive, comprehensive, and flexible plan for development, use and management is necessary to assure optimum use of the desert ecosystem consistent with conservation of the resources, while recognizing their fragile characteristics.

The California Desert Plan will include all activities pertinent of the management of the desert ecosystem. It will be organized to be responsive to changing conditions. As a management program, the plan will inventory resources and uses, make land-use allocations and define physical works. It will define programs. It will provide the means of management as well as performing the planning function itself.

The Desert Plan will document and provide supporting information concerning:

1. The need for the California Desert Plan.

The statement of the plan will address itself to the current situation of the California desert. It will quantify and discuss desert resources and the uses now being made of them. It will appraise the response of desert resources to current uses, set forth the characteristics of present desert users, and predict the penalties that will be levied by nature if present levels of management are not raised. This statement will reflect the urgency of the need for a desert management program to protect, preserve and enhance the desert environment.

2. The goals to be accomplished.

In this document, a goal is considered to be an end toward which society aspires, not a precise or quantifiable term. It is a broad concept that may be reached along numerous pathways that may be shifted to meet changing times. Goals may be realized through the achievement of objectives of shorter range. Individuals and groups expressing their opinions and

aspirations help establish goals, and through the democratic process the people ultimately define them through the ballot box. It is expected that the public, individually, in groups, and through their elected representatives, will be the source of goal definition.

3. The objectives the plan is to achieve.

Objectives are specific, quantified interpretations of the goals. Objectives in this case will provide the specific targets through which the California Desert Plan is to achieve its goals. Thus, objectives become building blocks. Reached and in place, each becomes a measurable step toward goal achievement. The complexity and magnitude of the California desert dictates that the present innumerable objectives be identified and evaluated during plan development.

4. The desert's resources and uses.

The desert ecosystem is comprised of a myriad of physical and biological resources used singly and in combinations by multitudes of people who enter the system as individuals, organized groups, or masses, depending upon the season, weather and other factors that are presently undetermined. Information concerning desert resources will be obtained through an inventory procedure that combines principles of plant ecology, remote sensing, geological and geophysical studies and photo interpretation supported by adequate ground-truth established through field checks and research. Uses being made of desert resources will be determined through traffic counts, photo interpretation and survey techniques supported by field studies.

5. The allocations of desert resources among present and potential users and criteria to serve as the basis for resource allocation.

In the broad sense, the entire Desert Plan study is directed toward making land-use allocations. Resource-use allocations should be made only following exhaustive study of (1) the characteristics of the resources, (2) the needs or desires of resources users, (3) criteria on which to base allocations, (4) possible conflicts of land use, and (5) consequences of the land-use allocation.

6. The interrelationships of various levels of government, agencies, institutions, and individuals as they pertain to the desert.

The boundaries of the California desert encompass many levels of government, jurisdictions of local, state and federal agencies and institutions, and the activities of groups and individuals that are concerned with the desert ecosystem. Parts of the California desert are included in planning activities of various government agencies at different levels. For successful plan development and implementation, all planning efforts that impinge upon the desert must be coordinated. The majority of desert users are people who live away from the desert. They visit it only for special purposes and for limited times. These people provide the sharpest impact upon the desert. Their needs and desires must be given consideration in planning for desert management.

7. The activities and time sequence necessary to meet objectives of the plan.

The California Desert Plan will be realized through accomplishment of numerous activities. Activities must fall into a logical time sequence if overall objectives of the plan are to be achieved. Logical activity flow schedules will be established based upon necessary time sequences and priorities.

8. The information base necessary to implement the plan.

The information base necessary to develop and implement the plan will be constructed by generating new information through resource inventory and use studies, and through review, study, and summarization of data, reports, and manuscripts that now exist in libraries, research reports, agency reports, planning reports, and personal observations and communications. A sound information base is vital to the planning function.

9. The means for management to accomplish its objectives, including coordination of all recognized activities.

The activities required to perform the management function and achieve objectives for which the plan is designed will be described.

10. The value to society of managing the desert according to plan.

The California desert is now subjected to more than five million recreation visitor-days of use per year. With development of the desert, recreation use is expected to increase to more than 50 million visitor-days per year by 2000. The single fact that such numbers of people are making use of the desert for recreation has tremendous social implications. The reasons why people are using the desert, what they derive from use of the desert, what they are spending in terms of time and money to visit the desert and what they would be willing to give up to continue using the desert have not been adequately studied. Little thought has been given to the carry-over effects of desert use on the user. That is to say, how does use of the desert influence off-desert attitudes, behavior, and activities, if at all? Such questions will need to be answered to serve as justification for public investments in the California desert that are required to protect it as uses grow. The returns must of necessity be measured in other than strictly economic terms. The motivations for these uses of the desert are not specifically economic. There are, of course, economic benefits to be derived from investments in the desert. These also must be analyzed and evaluated in terms of social benefits. The trade-offs among all uses must be evaluated.

11. The development of a program of continuing research and study.

The California Desert Plan document will not be the end of planning but only a phase of an ongoing planning process for the desert. A plan, to be viable, must contain elements that provide for continual updating activities. Growth of population and use will soon render a fixed plan obsolete. Information for plan updating must be obtained through a program of research and study geared to provide the information inputs that will be required.

The Desert Plan will be developed utilizing the following premises as guidelines.

1. Use of the desert is increasing at an accelerating rate. Much of the present use of the desert is uncontrolled and destructive of fragile desert resources. To assure continued availability of desirable desert characteristics for present and future generations, a comprehensive plan of development, use, and management is imperative.

The California desert offers benefits and values to present and future generations. Many of these are being damaged and destroyed by present users. Management programs controlling use of the desert ecosystem will be developed to assure conservation of desert resources while providing the maximum allowable use of the resources.

2. The BLM has the authority and responsibility for managing that part of the desert ecosystem included within the public domain to:
 - a. Provide for the public welfare and well-being.
 - b. Enhance and improve environmental quality.
 - c. Meet local, state and national goals of social and economic development.

These broad premises cover the range of public aspirations that are pertinent to California desert planning. They are not mutually exclusive, but interrelate. They are, however, sufficiently specific to provide guidance in determining goals and objectives.

Public welfare and well-being relate to personal, group and community aspirations. Included are security of life and health, personal income distribution, employment and population distribution.

Environmental considerations include conservation, preservation, restoration of natural and scenic resources and development of cultural resources. Lack of quality in the environment directly affects all levels of public welfare, population increase, and economic development. A quality environment, though valued very highly, has social implications that are not well defined. Planning must be directed toward rescue on the one hand and enhancement on the other, as well as toward conservation and preservation.

Economic development relates to increased income at local, state and national levels, increased employment, improvement of the economic base, improved income distribution, and improved services at all levels of government.

Social development has to do with improving those characteristics of the environment that pertain to life and the relationship of human beings in a community. The California desert, though removed spatially from the home community of the masses of

those who use it, is actually a significant part of the larger ecosystem in which masses work, live and recreate. People not only influence the desert; the desert influences people.

3. Components of the plan must be implemented immediately, prior to the completion of studies.

Some desert resources are now subjected to a degree of use that has destroyed, or will soon destroy, the very characteristics that make them useful or enjoyable. Deliberate acts of vandalism are defacing and destroying irreplaceable archaeological and paleontological sites, and some natural sites, such as the rare palm oases. Programs must be initiated immediately to halt these destructive forces. Programs to solve these critical problems will be combined with and form an integral part of the California Desert Plan.

4. The plan must encompass all of the 24 million acres within the California desert area, 12 million acres of which is included in the public domain.

The overall plan for desert management, development, and use must include all lands within the established desert boundaries. Extensive areas of other public and private lands located within the desert boundaries and the uses to which these lands are put will heavily impact public domain lands. Planning activities of all concerned with the desert ecosystem will be coordinated.

5. Maximum usefulness of the plan can be achieved only through user and public involvement in all phases of the plan's development and implementation (plan with the people, not for the people).

Awareness by the public and the public's active participation in the planning and decision making will be vital to the formulation and successful implementation of plans that are designed to achieve public goals. Elected officials and public institutions will be able to reflect many of these interests and attitudes. Many interested groups and individuals, however, have valuable ideas that are developing and which can contribute to and enhance planning. Public acceptability of the plan may be directly proportional to public involvement in the planning process.

6. The Desert Plan will be fully coordinated with planning units of the governmental subdivisions whose planning functions interface with those of BLM.

Many different levels of government and governmental planning bodies are interested in and planning for special uses of portions of the desert. Activities of all planning bodies must be coordinated to prevent planning overlaps and resultant conflicts. Where present conflicts exist, they must be resolved in terms of their relationship to overall desert planning and public welfare.

7. The plan will be comprehensive, but will provide sufficient flexibility to allow for modifications as new and pertinent information becomes available. Periodic revisions of the plan will be necessary.

Comprehensive long-range planning must embody mechanisms for periodic updating. The planning system must contain elements that provide for a continuous purging of outdated information and incorporation of information of new pertinency. Current updating provides the mechanism whereby a comprehensive plan can retain its flexibility and still meet the needs of changing times in a manner consistent with conservation of the desert resources. Periodic major revisions will be required to meet changing social goals. Even so, the plan still provides the logical pathway for goal achievement.

CHAPTER II

CALIFORNIA DESERT PLAN

OUTLINE AND GENERAL DISCUSSION

This outline and discussion is presented in the form that it might assume in the initial and future desert plan documents. The Desert Plan document is conceived as being updated and issued at intervals as changing conditions warrant. The document should be updated at about five-year intervals. The headings of the outline are intended to indicate the topics to be covered in the Desert Plan document. The discussion provides details and recommended contents but is not intended to comprehend all of the information that is to be included in the Desert Plan document. It is expected that the Desert Plan document will by reference include material independently produced during the planning study.

The outline covers the following general areas as major subdivisions of the Desert Plan document.

- The authority for and the scope of the desert plan.
- A description of the physical and biological environment of the desert.
- A description of the social and economic environment of the desert and vicinity.
- The planning goals and objectives and the planning methodology to be used in their achievement.
- The desert management program, encompassing the land-use allocations, programming activities and means of management.

The following discussion of each heading of the outline indicates the recommended content of the Desert Plan document.

I. INTRODUCTION

The introduction will present the basis and authority for the program, the concept of the Desert Plan, and any special descriptions that are required to inform the reader what is being presented, why the plan is being prepared, and what is contained in the remainder of the document.

A. Basis and Authority for Multiple-Use Planning and Management.

Reference to the specific authority by statute and description of the charge given to the agency.

B. Scope of California Desert Plan.

A statement of the range of planning and the relation of this planning to items of local, regional and national significance among the desert's resources.

C. Value of the California Desert Plan.

A statement indicating the value and significance of the plan. This should include a description of how the plan will be utilized as a tool whereby the desert area will be managed for the benefit of all.

D. Planning Activities by Others Influencing Desert Planning.

A listing of all planning activities by federal, state, and local agencies, and by private interests concerned with, participating in, or affecting desert planning or the California Desert Plan.

E. Concept of the California Desert Plan.

A statement of the concept of the Desert Plan as it is finally resolved.

F. Organization of California Desert Plan Document.

The organization and content of this document presenting the California Desert Plan.

II. PHYSICAL AND BIOLOGICAL ENVIRONMENT OF THE CALIFORNIA DESERT

This section presents an assimilation of all data, regardless of the source, on the physical and biological characteristics and resources of the California desert. Included will be the location and physical characteristics of the desert and the physical and biological resources of importance to desert-use planning, including geography, geology, climate, air, water, soils, minerals, vegetation, fish and wildlife, archaeological and paleontological, scientific, educational and historical, range and watershed resources.

A. Geography.

A description of the geographic particulars of the desert area and their relevance to the desert's resources and use.

B. Air.

A description of the air as a resource, specifically its relationship to and influence upon the uses of the desert. What is in the air of the desert, its quality for consumption by all life and how desert air will be affected by current proposed plans for the area that will be significant to the Desert Plan.

C. Climate.

A description of the global weather characteristics and general atmospheric circulation patterns as they influence the desert area. The general meteorology in the area, including cloud cover, winds, etc., and the amount and mechanism of rainfall production will be described. The statistics describing rainfall, temperature, evaporation, and incident energy, as they affect the desert plan, will be included.

D. Geology, Land Forms and Topography.

This section will include a summary geologic description of the origin and characteristics of the land features of the desert and any information concerning the physical characteristics of the desert that will relate to the utilization of the desert area for the required purposes.

E. Soils Resources.

This section will describe the physical and chemical properties of the soil and the soil classifications by characteristics relevant to the desert's uses, existing uses and potential.

F. Water Resources.

The existing water resources will be described in detail by major hydrographic areas and in relation to potential use areas. The descriptions will be statistical in recognition of the stochastic nature of rainfall, runoff and recharge, and water quality characteristics. Two categories of water resources exist in the desert area.

1. Surface waters.

The description will be by watersheds or by hydrographic areas and will include the frequency characteristics of peak and low flows and flow durations. Strategically located gaging stations, as available, will provide data for indexing and describing basin runoff. The chemical, biological, and temperature characteristics of the water will be set forth. Water will be described in terms of its origin, if possible, but the effect on flow or water quality of works planned for the near future will be included.

2. Groundwater.

The groundwater resource will be described in the detail required to satisfy the Desert Plan's requirement for quantity and quality information. This will include water reserves potentially available for agriculture, industry and urban development as well as water supplies for campsites, way stations, rest stops, and possible livestock and wildlife use.

G. Vegetation Resources.

This section will indicate the vegetation now existing in the desert area, a description of its uses and its relevance to the Desert Plan. A description of vegetation resources that are in danger of extinction and of the manner in which they are threatened will be included.

H. Fish and Wildlife Resources.

The fish and wildlife resources of the desert area will be described. The description will include their recreational, educational, scientific, economic and social values. Wildlife species of economic importance will be identified, including those that are pests or control pests. Rare and endangered species of fish and wildlife will be identified and discussed. The discussion will include species, habitat and population and environmental characteristics that threaten their continued existence.

I. Archaeologic and Paleontologic Resources.

This section will describe the archaeologic and paleontologic resources of importance to the Desert Plan. Primarily it will relate to their scientific and recreational significance. These resources will be described and located and their significance will be appraised.

J. Scientific, Educational, Aesthetic and Historical Resources.

Sites of historical relics of importance, geologic formations, and animal and plant life unique to the desert which may have scientific, educational, or historical values will be described in this section.

K. Rangeland Resources.

Under this section, vegetative cover now supporting or capable of supporting range livestock will be described. This description will include stocking rates and range condition. Range trend and utilization patterns will also be included where possible. Range management programs now being used will also be included.

L. Mineral and Energy Resources.

The mineral and energy resources and reserves of importance to the Desert Plan because of their economic significance or for other reasons will be covered. Mining operations that might affect the desert's land use will be included. The descriptions will include type of minerals, locations, reserves, and extraction methods.

M. Watershed.

This section will describe the watershed characteristics of the

California desert. Included will be information concerning erosion as related to kinds of soil, slope, exposure, topographic position, and water infiltration; vegetation as it relates to watershed characteristics; and other factors directly bearing on the functioning of watersheds, such as amount, intensity and distribution of rainfall and soil-disturbing land uses.

N. Recreation.

This section includes a description of physical characteristics of the desert resource that may have recreational potential. Recreational uses of the resources will include hunting, fishing, boating, water skiing, rock hounding, hiking, swimming and off-road vehicle use.

III. SOCIAL AND ECONOMIC ENVIRONMENT

This section will describe the prevailing social and economic environment of the California desert and its setting. The topics will include demography, employment, leisure time, economic activity, institutions, recreation, and their current relation to the use of the desert and the planning for the desert.

A. History of Habitation and Use.

Included here will be a historical review of the nature of settlement, the culture and types of people, and economic activity ensuing from such settlement as it relates to a description of the current general overall activity and categories of activity within the desert area and vicinity.

B. Demography of the Desert and Adjacent Metropolitan Areas.

The demographic characteristics of the population of the southern portion of the state of California, including size, density, distribution, vital statistics such as birth rate and death rate, and other items of importance in determining future trends, places of residence and any activities that would affect the Desert Plan will be described.

C. Social Aspects of the Desert.

This section will describe the living patterns and styles of desert area residents, their leisure time activities, and relationships to

their surroundings. The social system will be treated as separate from the economic fabric described later in this section. Environmental factors encouraging habitation in a given area will be described. Any negative environmental factors such as air or water pollution and congestion of traffic ways will be described. Each aspect would be described separately for urban and rural dwellers, and for residents within the desert and of the vicinity of the desert.

D. Economic Activity.

The economic fabric of the desert area and vicinity, including production of goods and services, earnings, employment and labor force capabilities, income levels among labor force, physical resource use in economic activities, will be described. Also included will be factors influencing the location of enterprises and their level of production. The description will focus on the elements that indicate future trends of importance to desert planning. The economic activities to be described would include industrial, mineral, agricultural (cultivated and intensive livestock), grazing livestock (rangeland livestock), recreation, services (business), and government (all levels).

E. Other Management Considerations.

1. Institutions.

The institutions here referred to are government and private organizations that control and serve the needs of desert users. The institutions having an influence on resource control, conservation and utilization will be emphasized. The description will include federal, state, county, city, and public districts and private organizations that serve the people.

2. Land Ownership.

This section will describe the land ownerships and their patterns and uses as pertinent to the Desert Plan. Included will be the effects different ownerships will have on the use of the desert.

3. Services.

Public and private groups and business enterprises that provide the water, power, transportation, and other services will be described. The intent is to include those services and

utilities that support the economic and social fabric of the desert area such as law enforcement, water, waste disposal, electricity and gas, transportation, communications, protection, trespass, cadastral, realty, and administrative.

IV. PLANNING GOALS, OBJECTIVES AND METHODOLOGY

This section will present the planning goals, objectives and methodology. It will record and interpret national and regional goals for the desert planning and management staffs. The specific objectives are to derive targets for the management program. The section will also include the analysis, reasoning and assumptions that are implicit in the objectives that the plan is designed to achieve. The methodology used to prepare the plan will be presented.

A. Desert Plan Concept.

This will be an elaboration of the specific items presented in Section I, INTRODUCTION. It will provide details of the overall impetus of the program for the guidance of the staff. It will provide the major points of reference for the planning activity.

B. National Goals.

This section will present the overall goals of the nation relevant to the desert. The sources of definitions will be the federal and state administrative agencies and legislation. The categories below are intended collectively to encompass all pertinent national goals.

1. Public Welfare and Well-Being.

Relates to personal, group and community aspirations. Included are security of life and health, personal income distribution and interregional employment and population distribution.

2. Environment.

Includes conservation, preservation, enhancement or creation of natural, scenic and cultural environment.

3. Economic Development.

Relates to development designed to enhance aggregate income to the nation. Included are economic investments and production base diversification for national reasons. Also relates to increased local income and employment, improved local economic base, improved local income distribution, and improved services. Goals for local economic development may or may not be at the expense of other locales or aggregate national income.

C. Regional Goals.

The goals of the region not in common with national goals are described in this section. The goal definitions are usually set by the state and local administration, private groups and public forums.

D. Elements of National and Regional Goals Specific to the Desert.

The analysis and results described here will be determined from factoring out the elements of the national and regional goals that will guide definition of objectives and Desert Plan preparation. The goals will necessarily be broad to encompass all areas of activities and as such will require analysis to insure objectives are properly defined. The analysis and judgments made will be described along with the conclusions as to the specific elements of the goals pertaining to desert-use planning and management.

E. Social and Economic Projections Pertinent to Goals.

This includes a description and projection of what is expected to occur for the categories of Section III, SOCIAL AND ECONOMIC ENVIRONMENT. Projections of past trends will not be the only technique used. Probable and possible future policies and conditions affecting the items will be assessed and analyzed and judgments will be recorded. Projections will reflect the goals and their impact on expected future conditions. Not all projections will be in numerical terms -- for example, institutions and social aspects of the desert. However, the descriptions of what is expected or may happen will be as specific as data and vision guided by professional judgments will permit. The projections will be reconciled with projections by others such as the U.S. Office of Management and Budget, and other state and federal planning studies. The categories are under these subheadings:

1. Demography.
2. Social Aspects.
3. Economic Activity.
4. Management Considerations.
 - a. Institutions
 - b. Land Ownership
 - c. Services

F. Planning Objectives by Land-Use Categories.

This category includes the specific objectives that are the targets for the desert-use planning activities and which the plan for desert management is designed to achieve. Objectives will be quantified, to the extent possible. They will be derived by translating goals specific to the desert land use into quantifiable terms that are capable of achievement by the desert's development, use, and conservation, and by consideration of expected future conditions.

1. General Definition of Categories and Procedures.

The specific categories for which objectives are stated, reasons for the choice, and the detailed procedures used in their quantitative development.

2. Management Recommendation and Decision Boundary Determination.

The criteria to be used for establishment and identification of unit boundaries are to be set forth.

3. Quantified Objectives, by Location and Time Without Constraints.

The specific quantified objectives that the land-use categories for the Desert Plan are designed to achieve. The following list covers the range of potential land-use categories.

a. Resource Activity.

- (1) Urban and Industrial Development
- (2) Agriculture
- (3) Water Resources Development

(4) Recreation

- (a) Camping and Picnicking
- (b) Rock Hounding
- (c) Off-Road Vehicles
- (d) Hiking and Sightseeing
- (e) Hunting and Fishing
- (f) Boating and Waterskiing, Swimming

(5) Rangeland

(6) Mineral Development

(7) Wildlife Habitat

(8) Scientific and Educational Preserves

(a) Archaeological and Paleontological

(b) Vegetative Preserves

(c) Wildlife (rare species)

(9) Open Space

(10) Military (buffer zones)

(11) Tenure Restricted

(12) Natural or Primitive Areas

b. Management Considerations.

(1) Transportation

(2) Support Services

G. Role of Participants.

1. Role of Bureau of Land Management.

The role of BLM as the lead agency in formulating the Desert Plan will include coordinating the activities and interests of all other agencies and of public user organizations in making the judgments and the decisions for the plan and in assuming the responsibility for the formulation and management of the plan.

2. Role of Other Participants.

The role of other participants will be to offer assistance and ideas in structuring the Desert Plan. Activities of all participants influencing the Desert Plan will be included. The participant

categories foreseen include:

- a. Federal Agencies and Commissions.
- b. State and Local Agencies.
- c. Institutions.
- d. Citizen Groups and Individuals.

H. Planning Methodology.

The methodology used in the planning activities leading to the Desert Plan will be described. The process of planning, the means of its performance, and guides used are in many respects a part of the plan and, as much as any other specific category, lend the plan the dynamism that indicates that plans are not ends in themselves but also the means of accomplishment.

1. Planning Concepts.

The delineation of especially pertinent planning concepts such as the public as decision maker, or the executive branch as decision maker or the latitude within which alternatives may be considered.

2. Formulation Procedures.

The procedures applied in formulating the management program, including the value criteria used, the means of integrating the multiple objectives and of resolving conflicts. The breakdown below indicates that the procedures are more than economic and imply the establishment of social and environmental values.

a. Social Value Criteria.

Answer the following questions: How much and what portion of investments need not produce economic returns? How are non-valued elements considered in formulating the plan? How does the plan relate to economic investments?

b. Economic Analysis.

Market values, interest rates and the general structure for market-valued analysis and decision criteria.

c. Environmental Analysis.

This section includes factors of an environmental nature not included in other categories, and procedures related to them such as evaluating the impact of air and water pollution and groundwater depletion. The objective is specifically to derive control criteria and guides for use in the formulation and execution of the plan and to determine its effects on the environment.

3. Interrelationships of Objectives of all Agencies, Institutions, and Groups.

It is apparent that some of the objectives will be complementary while others may not be. This item will contain discussion regarding the interrelationships, both complementary and competitive. This comparison will illustrate the complexity of the task of planning for multiple objectives in a comprehensive manner and will be written to assist in sorting out the important elements to be considered and how they interrelate. It is emphasized that the objectives are what is hoped to be achieved and are not necessarily possible of achievement in all instances. The land-use categories listed in F-3 above are those in which interrelationships may exist; some of them are again listed below.

a. Resource Activities.

- (1) Urban and Industrial Development
- (2) Agriculture
- (3) Water Resources Development
- (4) Recreation
 - (a) Camping and Picnicking
 - (b) Rock Hounding
 - (c) Off-Road Vehicling
 - (d) Hiking and Sightseeing
 - (e) Hunting and Fishing
 - (f) Boating and Waterskiing, Swimming
- (5) Rangeland
- (6) Mineral Development
- (7) Wildlife Habitat
- (8) Scientific and Educational Preserves
 - (a) Archaeological and Paleontological

- (b) Vegetative Preserves
- (c) Wildlife (rare species)

- (9) Open Space
- (10) Military (buffer zones)
- (11) Tenure Restricted
- (12) Natural or Primitive Areas

b. Management Considerations.

- (1) Transportation Right of Way
- (2) Support Services

4. Resolution of Conflicts.

The priorities and methods which will govern the choice of a solution where conflicts occur among objectives of public and private groups and agencies and/or value criteria are set forth. Factors to be considered will include:

- a. Alternatives available
- b. Degree of compatibility or incompatibility
- c. Guidelines for selection among options.

V. THE CALIFORNIA DESERT MANAGEMENT PROGRAM

This section will set forth the results of the investigations and studies, and the negotiations and decisions that will define the program of desert management for the Bureau of Land Management that is developed through the Desert Plan. Included will be the land-use allocations, the programming activities, and the means of program management determined to best achieve the specific objectives delineated in Section IV. The section will include discussion of any items remaining in need of resolution before the management program can be fully implemented.

A. General Activities of the Management Program.

Introduction of the management program activities and brief description of their purposes, scope and interrelationships with the other activities.

B. Land-Use Allocations.

The allocation or apportionment of the available lands among use categories. This section coincides with activity planning prior to project development. The use categories may coincide with the listing of objectives in Section IV. The allocations will be indicated in the quantified terms appropriate to and consistent with the planning objectives.

C. Programming Activities.

Include the physical works (projects) and programs required to meet the specific objectives consistent with and guided by the value criteria. The projects and programs will be given in terms of the specific physical works, their functions, scales, and costs and their non-structural aspects in relation to specific objectives. They will be time framed. To the extent possible, the separable aspects (in terms of coordination of multiple objectives) will be presented.

1. Physical Works.

Works are projects to be constructed. The categories of works illustrating the intent of this subsection will be those for:

- a. Roads and Trails
- b. Way Stations
- c. Camp Grounds
- d. Visitors' Facilities

2. Management Programs.

Programs are non-physical works that achieve the objectives, or portions thereof. The following list is a sample of the types of programs foreseen as useful in meeting the objectives.

- a. Resources Management
- b. Enforcement (Ranger Force)
- c. Information and Education
- d. Public Safety
- e. Fire Protection
- f. Trespass
- g. Communications

3. Selection of Alternatives.

Descriptions and analyses of the alternatives for which the governing value criteria do not provide a firm enough basis to select a solution. The distinguishing elements of each alternative will be emphasized.

4. Interim Management Activities.

The activities of a critical nature listed to be undertaken during the planning phase will be documented. The effects of the early decisions on the overall plan will be discussed. The experiences gained from the operation of the constructed way station and other interim activities will be recorded for reference.

D. Means of Management.

This subsection will present the means to achieve the planning objectives. It will address the overall strategies for assuring that allocations are made available through legal action, the timely construction of physical works and the initiation of programs. The categories required to describe this element of the program will not be known until the program is defined. The following list indicates the types of topics that probably will be required to be included:

1. The Continuing Planning Function.
2. Legal Authority.
3. Organization of Management Institutions
4. Operating Procedures and Policies
5. Financing (In Programming Process)
 - a. Physical Works
 - b. Programs
 - c. Operation and Maintenance

The one element that may seem out of place in the above listing is the continuing planning function. Since a basic element of the concept is that the plan be continuously updated, it is apparent that a vital element of the management program will be this

function. It is the means of building flexibility, responsiveness and continuity into the program.

E. Reconciliation of Planning Objectives and the Management Program.

Certain objectives may not be possible to achieve because of conflicts with other priority objectives, failure to meet value criteria, lack of authority, or impracticability of accomplishment. These factors should be discussed and further actions or planning set under way to rectify the differences, both through adjustments in the objectives and in the value criteria. An explanation of discrepancies and a description of necessary adjustments will be needed.

F. Restraints on the Management Program.

There may be situations and conditions which restrain full operation of the management program. Additional legal powers or delegation of contracting powers or other authorities may be necessary for performance of elements of the programs. The program will operate without removal of the restraints but not precisely as determined best in the planning studies. These restraints are considered in a different category from those growing out of failure of the management program and objectives to coincide. This section discusses conditions restraining operation of components of the management program within the plan and includes:

1. General Aspects in Need of Resolution and Action and Delineation of Specific Restraints to Operation of Components of the Management Program.
2. Agency Reorganization.
3. Legal Adjustments.
 - a. Laws Governing Management and Use
 - b. Powers Governing Means of Management
4. Financing.
5. Personnel Ceiling.
6. Policy and Procedures.

7. Ownership Patterns and Boundaries.
8. Public Attitudes.
9. Decisions or Activities Outside the Direct Control of the Desert Plan Management.

CHAPTER III

ORGANIZATIONAL STRUCTURE

The basis for the organization proposed for conducting the California Desert Program is that the plan will be developed by an independent staff responsible directly to the State Director. This planning organization shown on The California Desert Plan Organization Chart (Figure 2) clearly delineates the relationships that have been described in its lines from and to the boxes. It will have a maximum of free access to the State Director's Technical Staff, to the District Managers, and to public agencies and user groups. The Plan Director and staff of the California Desert Plan Development Program will, in turn, receive guidance from the State Director's Technical Staff, District Managers, and the public and user groups. There will be no interference with present lines of communications between offices and among groups within the Bureau of Land Management. This staff organization is similar to the special studies organization approved for the pipeline study in Alaska.

Additional staff will be required to meet interim management responsibilities. The staffing requirement, as shown on Table 10, will be added to present District staff and is not considered to be a direct part of the planning organization. However, as shown in Figure 2, there will be considerable interaction between Districts' staffs and the Desert Plan Director's staff. It should be noted that the organization presented in this chapter is only to meet the BLM permanent staff requirements for the planning effort. As this program effort diminishes, members of this staff should be phased into the districts' accelerated management program resulting from the development plan or become the nucleus of the planning staff for other similar BLM programs.

The California Desert Planning staff will be separate so that it may proceed with the maximum of freedom toward preset goals. As it proceeds, it will have three major sources of influence: (1) inputs from the District Managers and their emergency interim operations, (2) technical guidance and review on a continuing basis from the State Director's Technical Staff, and (3) interplay of ideas and discussions with the public and user groups.

Traditional attitudes and established practices will be subject to review and potential change, and the planning staff, therefore, inevitably will be in controversial areas from time to time. For example, the planning staff will have to rely on interaction among user groups to wear off the rough edges of some proposals that might limit access to environmentally

fragile areas. The District offices, which have continuing managerial tasks to perform while the planning is going forward, will be buffered from disrupting controversy by the separation of the California Desert Planning staff. The California Desert Planning organization will be housed separately to indicate its status. It will have need of proximity to a good library and to the desert. The first priority proposal for its headquarters is near the campus of the University of California at Riverside. A second choice of location would be in the vicinity of Barstow.

The Plan Director will have, as indicated on the chart, a principal assistant, and the organization will have two major staff components, one oriented toward resources evaluation and one composed of resources planners. There will be three service branches: Administration; Information, Education and Technical Writing; and Program Control.

The Resources Planning staff will have primary responsibility for the resource inventory and analysis phases of the program as well as development of the overall plan. Members of the planning staff, in addition to their high subject matter capabilities, must be familiar with use of aerial photography and photo interpretation techniques. Also, members of the staff must have background experience in natural resource planning.

The Resources Evaluation staff will function as a service group providing highly specialized expertise to the Resources Planning staff. In addition, members of this staff will provide specialist overviews of the resource analysis and planning effort.

All members of both the Resources Planning and Resources Evaluation staffs will have frequent contact with various groups and individuals. Thus it is imperative that these people have the ability to work effectively with people of varying background and purpose.

The Resources Evaluation and Resources Planning staff directors must have the experience in their fields required to command the respect and facilitate the work and interchanges of the staff of specialists under them. The highly technical and management competence required for these two groups of positions demands a higher than usual grade structure. To meet these requirements, the Plan Director must be classified at GS-15; the Assistant Director, Resources Planning and Resources Evaluation Staff Directors at GS-14.

If planning staff directors in the Bureau of Land Management have not been classified at the levels herein suggested, this should not be considered as an unbreakable precedent when this group is established. No similar planning task of this extent has been undertaken within the Bureau.

Other federal agencies in California have classified planning personnel, who have no more complex tasks than those that are being assigned here, in grades comparable to the ones suggested for the California Desert Planning staff. Region II of the Bureau of Reclamation, a sister agency of the Bureau of Land Management in the Department of the Interior, has classified its Plan Division Chief at GS-15. (It has similarly classified other division chiefs.) The Bureau of Reclamation Regional Planning Division chief has jurisdiction over planning of water resources in an area about the same size as the California Desert's. He is involved with a large number of fields of specialized activities, though certainly no more than will be encountered in planning for the preservation of the desert environment in California. The District Office of the Corps of Engineers in Sacramento has an Engineering Division in which planning is concentrated and a Construction Division, each headed by civilians in Grade 15. A detached Hydrological Division, headquartered at Davis, but administered by the District, is also headed by a GS-15, even though it operates in a narrow field of specialization. The State of California Department of Water Resources has planning functions of a scope and complexity to compare with the California Desert Program. The Department of Water Resources grades and salary levels for planners and planning staff directors are comparable with those of the Bureau of Reclamation and the Corps of Engineers. For example, the Division of Resources Development is headed by a Division Engineer with a salary range of \$1,976 to \$2,432 per month.

Additionally, consideration should be given to the comparatively higher salary level existing in the State of California. Thus, successful competition for the expertise required to fill all of these positions from the specialist staff to the Plan Director requires a competitive salary range.

It is also believed that, since this plan formulation constitutes a first for the Bureau, much research and development work will be required. Research and development activities demand a very high degree of technical competence. The procedures and techniques developed will be utilized by other Bureau programs in the future. Thus more importance must be placed on this study and this serves to justify a salary range commensurate with the demands of the expertise required.

To be effective and accepted, planning must be done with a maximum of continuing public exposure, which accounts for the emphasis on two-way communication with public and user groups. The plan must be developed in full view of all interested groups so that new attitudes may have the opportunity to form with the passage of time as the weight of facts and the force of ideas that are developed in the process become familiar and understood. The Bureau of Land Management will be trying to reverse many

attitudes toward the public lands that have persisted in our culture since pioneer days. Today millions live near the deserts and have access to fragile ecological domains. Unless restraints on the uses of the desert come into play through public awareness and acceptance, deterioration of the desert environment will continue.

The information, education and technical writing specialists are proposed to provide the staff necessary to prepare and disseminate interpretive material as the program develops. They will work closely with the Director and his assistant, with the planning staff, and with public and user groups. The organization and plan of action herein envisaged will invite user-group participation at the outset and will encourage continued involvement with the California Desert Program during plan development and implementation.

The Program Control staff consists of two specialists, Program Control and ADP liaison specialist will provide ADP expertise to the Resources Planning staff and will coordinate planning staff computer needs with ADP program services.

CALIFORNIA DESERT PLAN ORGANIZATION CHART

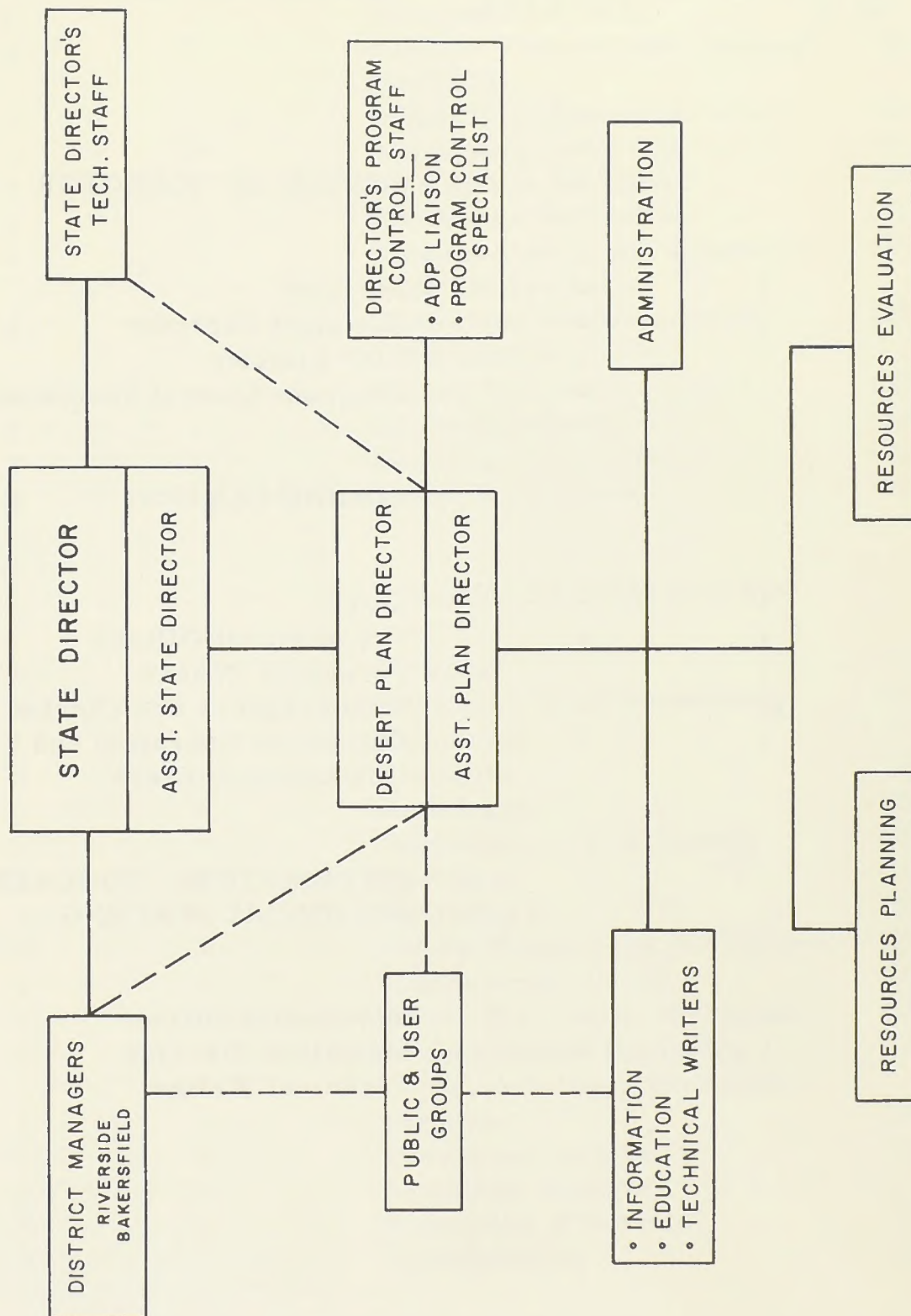


Figure 2

COORDINATED DESERT PLANNING STAFF

<u>STAFFING STATUS</u>			<u>FUNCTIONAL TITLE</u>	<u>GRADE</u>
Extended	BLM	CONTRACT		
	Optimum			
OFFICE OF DIRECTOR				
1	1	-	Director	GS-15
1	1	-	Assistant Director	GS-14
1	1	-	ADP Liaison	GS-13
1	1	-	Program Control Specialist	GS-11
ADMINISTRATION				
1	1	-	Chief	GS-12
0	1	-	Procurement Officer	GS-11
1	1	-	Personnel Officer	GS-11
13	18	-	Stenographers and Clerks	GS-4-7
1	1	-	Equipment Operation and Maintenance Clerk	GS-6
INFORMATION, EDUCATION AND TECHNICAL WRITING				
1	1	-	Information Officer	GS-13
1	1	-	Education Director	GS-12
1	2	-	Technical Writer	GS-11-12

STAFFING STATUS			FUNCTIONAL TITLE	GRADE
Extended	BLM	CONTRACT		
	Optimum			
RESOURCES PLANNING				
1	1	-	Director	GS-14
1	2	+	Wildlife Management Specialist	GS-11-13
2	3	+	Range Management(Ecology)	GS-11-13
1	1	+	Soil Management Specialist	GS-11-13
3	5	+	Recreation Specialist	GS-11-13
1	1	+	Watershed Specialist	GS-11-13
1	1	+	Transportation and Communi- cation Specialist	GS-11-13
1	1	+	Protection (Enforcement Specialist)	GS-11-13
2	4	+	Mining Specialist	GS-11-13
1	2	-	Realty Specialist	GS-11-13
1	1	+	Land Use Specialist	GS-11-13
3	4	-	Scientific Support	GS-7-9
RESOURCES EVALUATION				
1	1	-	Director	GS-14
1	1	+	Ecologist (Environmental)	GS-11-13
1	1	+	Economist	GS-11-13
1	2	+	Biologist	GS-11-13
-	-	+	Sociologist	GS-11-13
-	-	+	Geographer (Arid Zones)	GS-11-13
1	1	+	Geologist	GS-11-13
-	-	+	Hydrologist	GS-11-13
-	1	+	Safety (Employees & Visitors)	GS-11-13
1	1	+	Engineering (Civil)	GS-11-13
-	1	+	Water Resources Specialist	GS-11-13
1	1	+	Archaeologist (Including Paleontology, Historian)	GS-11-13
1	1	-	Solicitor	GS-11-13
1	1	+	Photogrammetrist	GS-11-13
1	2	-	Scientific Support	GS-7-9
3	3	-	Surveyors (Cadastral)	GS-7-11
2	3	-	Cartographer	GS-5-7

+ Indicates to be contracted to other federal agencies, state and local agencies, universities or consulting firms.

CHAPTER IV

SCHEDULE OF ACTIVITIES

The California Desert Program General Planning Network (Figure 3) presents the schedule of the major activities that must be undertaken and completed to prepare the initial optimized California Desert Plan documents. The schedule is based on the Desert Plan concept and the plan outline and it sets forth the critical dates. It reflects the emphasis which is to be placed on the determination of the goals, and the establishment of objectives and criteria in the plan formulation procedures. The activities in the chart are presented in sufficient detail to delineate the range of effort required in the preparation of the plan. The chart demonstrates through the use of dashed lines the interrelationship of the activities.

The completion date for initial document formulation represents a compromise balancing the critical need for the plan with efficient utilization of manpower and the total effort required to prepare the Desert Plan.

There is a continuing degradation of the desert ecosystem by the impact of virtually uncontrolled public use, including the recently popular "off-road vehicles". Unless immediate corrective measures are taken, many of the desirable environmental characteristics of the desert will be destroyed. Therefore, it is imperative that the development of the desert plan be initiated at the earliest possible date. The first critical date in the network schedule is fiscal year 1972. A delay of even one year will result in the loss of some scientific and historical sites, as well as rare plant and animal species that are unique to the California desert. These have priceless significance; fragile though they may be, they can and must be preserved.

The Desert Plan would play an important role in determining the specific uses to be assigned to the various ecological domains consistent with all of the demands to be placed on the desert and the sum of the protection that will be required. The need to authorize preparation of the California Desert Plan is now, not tomorrow.

The schedule for the preparation of the plan requires continuation of many of the present activities through the current fiscal year (1971) preliminary to initiation of the full planning effort. This effort will be important to the maintenance of the overall schedule for completion of the plan document and for proper development of the interim management activities.

Of prime importance is the coordination of the overall planning activity with the public and users groups. The coordination will develop many ideas

obtained from users of the desert. These ideas must become part of the Desert Plan if it is to effectively serve the demands to be placed on the desert in the future. Also, understanding and support of the restraints that must be incorporated into the plan if the desert is to be protected will result from interaction of the planning staff with the public and user groups.

Full coordination is also required between the BLM districts with interim management responsibilities and the planning activity. What is determined to be critical by the interim management program will affect what is to be included in the Desert Plan. The effects of this interaction will help establish priorities for development among the phases of the plan as well as among the uses to which critical areas may be assigned.

Figure 4, Integrated Plan Development Network, reflects the formulation of the overall plan. Essentially, the method adopted by BLM under its management planning system is used. The network is included to depict, though it is not intended to be all-inclusive, the single-purpose land uses that are to be considered during the planning process.

Figure 5, Interim Management Network, is a more detailed schedule of the Interim Management activity shown in Figure 3. Currently many critical areas requiring immediate remedial measures have been identified. Additional critical areas will be identified as the work proceeds. Implementation will be based on priorities to be established by these considerations. Though the schedule details only the plan period, activity will be phased into and continued under the Desert Plan implementation period. It, therefore, will be described as an integral part of the Desert Plan document.

Many of the activities indicated as having been completed on given dates in the schedule are completed only with respect to their statement in the planning document. Continuing activities will be required in order to update the plan document at predetermined intervals in the future. The activities, however, will require effort on a much smaller scale in the later periods.

The California Desert Program General Network (Figure 3) portrays and schedules activities in a logical sequence which will result in an Optimized Plan Development by January 1, 1977. An Extended Plan Development Program would result in essentially the same ultimate plan, but with a completion date of January 1980. A preliminary, less-detailed plan would be prepared to meet the now-scheduled plan completion date (January 1, 1977).

The nature of the overall planning effort would dictate that extension of activities or delayed scheduling would be limited to certain aspects of the program. For example, to maximize efficiency, aerial photography would be obtained as scheduled and development of ADP-systems would remain as now programmed to assure availability of computer programs for data

handling and analysis. In fact, most activities scheduled for 1971 and 1972 would remain virtually unchanged.

The extension of the planning effort utilizing a smaller technical staff would come primarily as a result of extending the period of data collection and analysis, scheduled for completion under the Optimized Plan in July 1975, over a period of an additional 3 years. Thus, less resource information would be available by 1977, and preliminary report (January 1977) would lack sufficient detail in many areas on which to base final management decisions. Integration and analysis of additional data and resolution of conflicts and planning would continue in the same relative sequential order as scheduled, (Figures 3 and 4) and a final, detailed California Desert Plan comparable to the end product of the Optimized Plan Development Program would be prepared by January 1980.

Activities now portrayed in the Integrated Plan Development Network (Figure 4) and Interim Management Network (Figure 5) would continue in the same order relative to the overall plan, but schedules would be extended to reflect delayed data collection and analysis and reduced planning effort.

CHAPTER V

BUDGET

The budget for the Desert Plan program has been evaluated under two separate activities: The Plan Formulation and the Interim Management. These activities, though analyzed separately for budget purposes, are inter-related. Activities under the Interim Management program will have definite effects on the overall Desert Plan. The Desert Plan is needed to assure the most beneficial use of the desert area. In addition it must serve management as a tool to assure proper implementation.

The budget is predicated on authorization to begin in fiscal year 1972. The budget summary for the Optimized Plan Development Program and Interim Management is shown on Table 1. Budget details for these programs are shown on Tables 2, 3, and 4. The budget summary for the Extended Plan Development Program is shown on Table 5. Details of the Extended Plan Development program budget are shown on Tables 6 and 7.

The budgets were derived by determining manpower staffing and direct costs associated for each activity within the total program. Job classifications and ranges in accordance with the organization chart were used to determine the average unit cost for each activity's manpower requirement. The unit cost shown for BLM personnel includes the necessary amounts for travel and per diem that will be required.

The distinction between consulting services and permanent BLM staff was made in recognition of the need to form a nucleus staff which would be maintained to reevaluate and implement the initial plan and to provide the competence to meet the highly specialized nature of the overall assignment. Consideration was given to the periodic peaking requirements of the specialty activities with peak needs to be met by contracting for consulting services with other federal agencies, state and local governments, universities and private consulting firms. The staffing schedule is shown for the Optimized Plan Development on Table 8 for Interim Management on Table 9 and for the Extended Plan Development on Table 10.

The unit costs for consulting staff include salaries, overhead and welfare costs normally charged for these services and are considered as an average for all levels of personnel required.

The office operation and maintenance costs assumed that a separate office will be established to perform the planning function. The costs are comparable to those prevailing in the local area. Office equipment costs are current with those available through the BLM procurement section.

It should be recognized that the budget costs presented are based on current costs. Therefore, if inflation continues, the costs will be significantly increased in future years. For example, if inflation continues at six percent per year, the overall average increase for the five-year plan program would be approximately 20 percent and for the eight-year plan program would be about 30 percent.

Manpower requirements and costs used in the Interim Management portion of the budget are those reported by the Task Force Committee created within BLM for these specific purposes.

The Plan Development budgets reflect only the initial plan period, not the planning costs involved to continually update the Desert Plan document. It is assumed that this cost will be included as a part of the implementation program.

This program is a first for BLM; therefore, there will be certain costs incurred that will have significance for future development of all studies of this type associated with BLM lands of a similar nature. Activities such as establishing goals, objectives, criteria, policies and procedures, ADP program development, analysis techniques and plan formulation would have broad application to other areas. For this reason it is believed that a percentage of these costs should be allocated to national BLM programs. A precise estimate of the percentage of planning development costs which should be charged to the overall BLM programs is difficult to assess. However, a careful study of the development aspects of the planning effort indicates that allocation of 40 percent of the plan development budget to national BLM programs would be realistic and justified.

Certain costs such as aerial photographs, office operation and maintenance costs, management and administration staff, and computer time for data storage, retrieval and analysis are all chargeable as Desert Plan formulation costs.

If the use of the percentage chargeable to the plan is deemed justifiable for the reasons and for the items stated as allocatable, the costs for the Optimized Plan development aspect of the California desert would be reduced to about \$7.5 million.

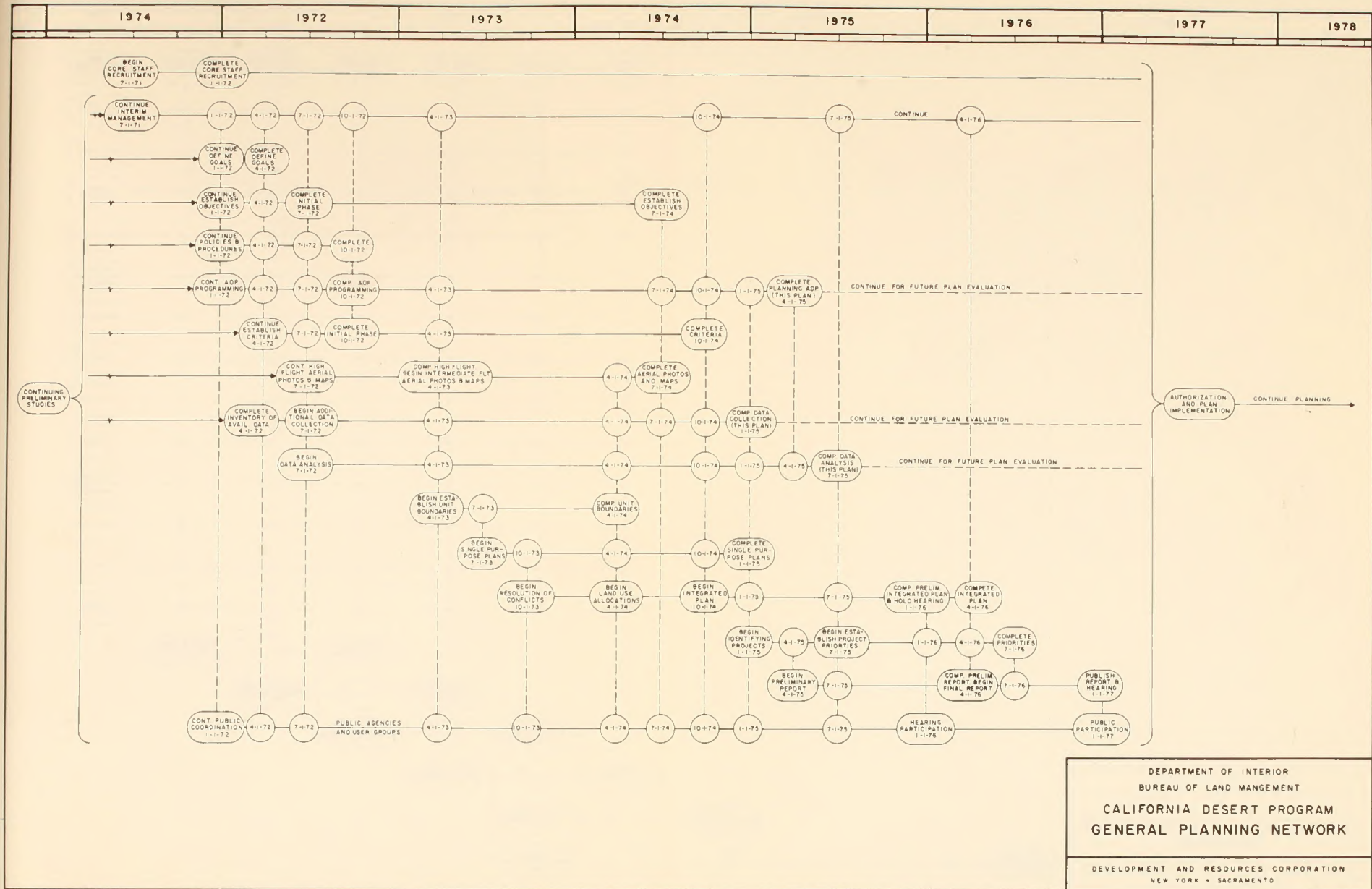


Figure 3

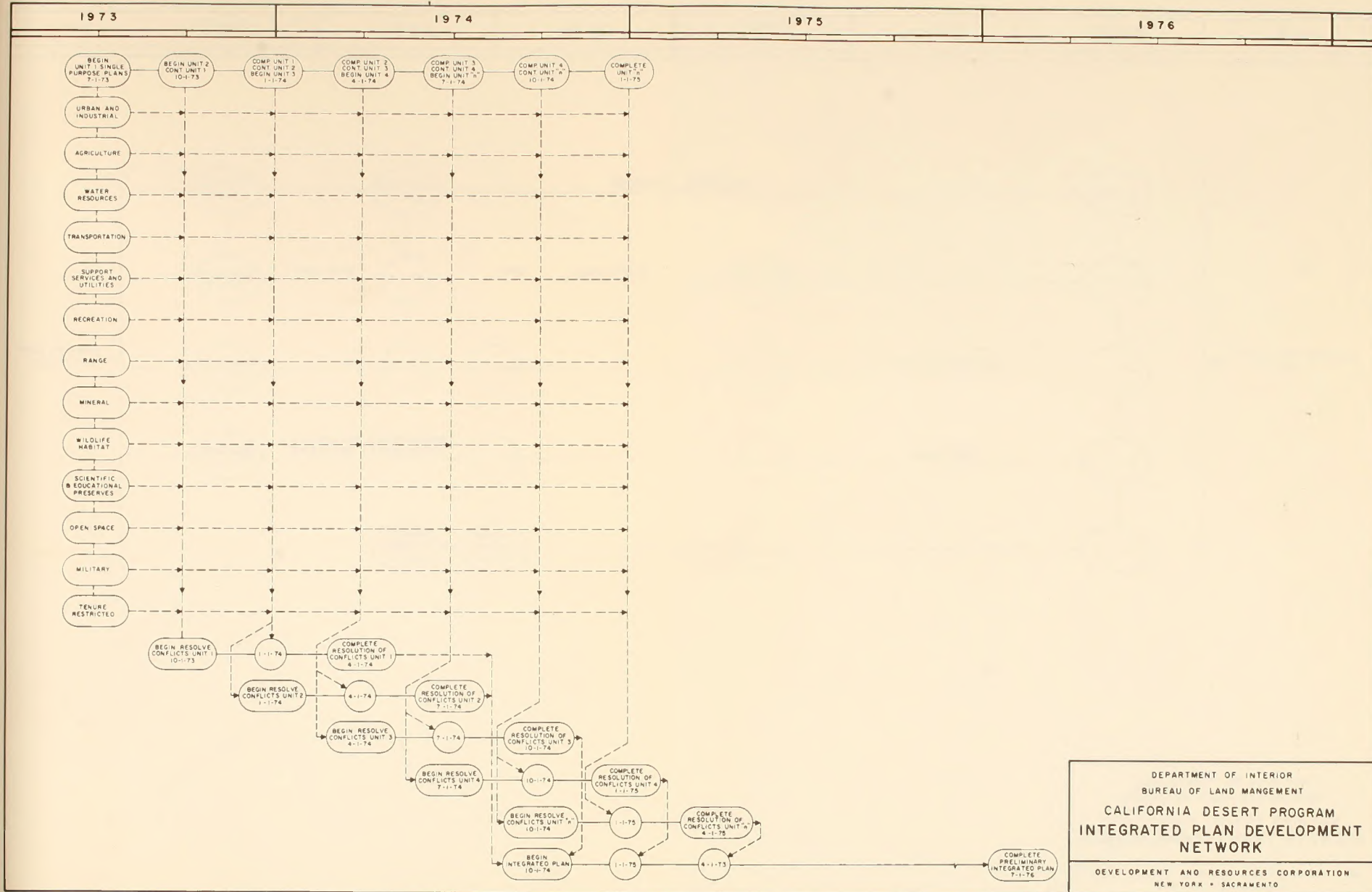


Figure 4

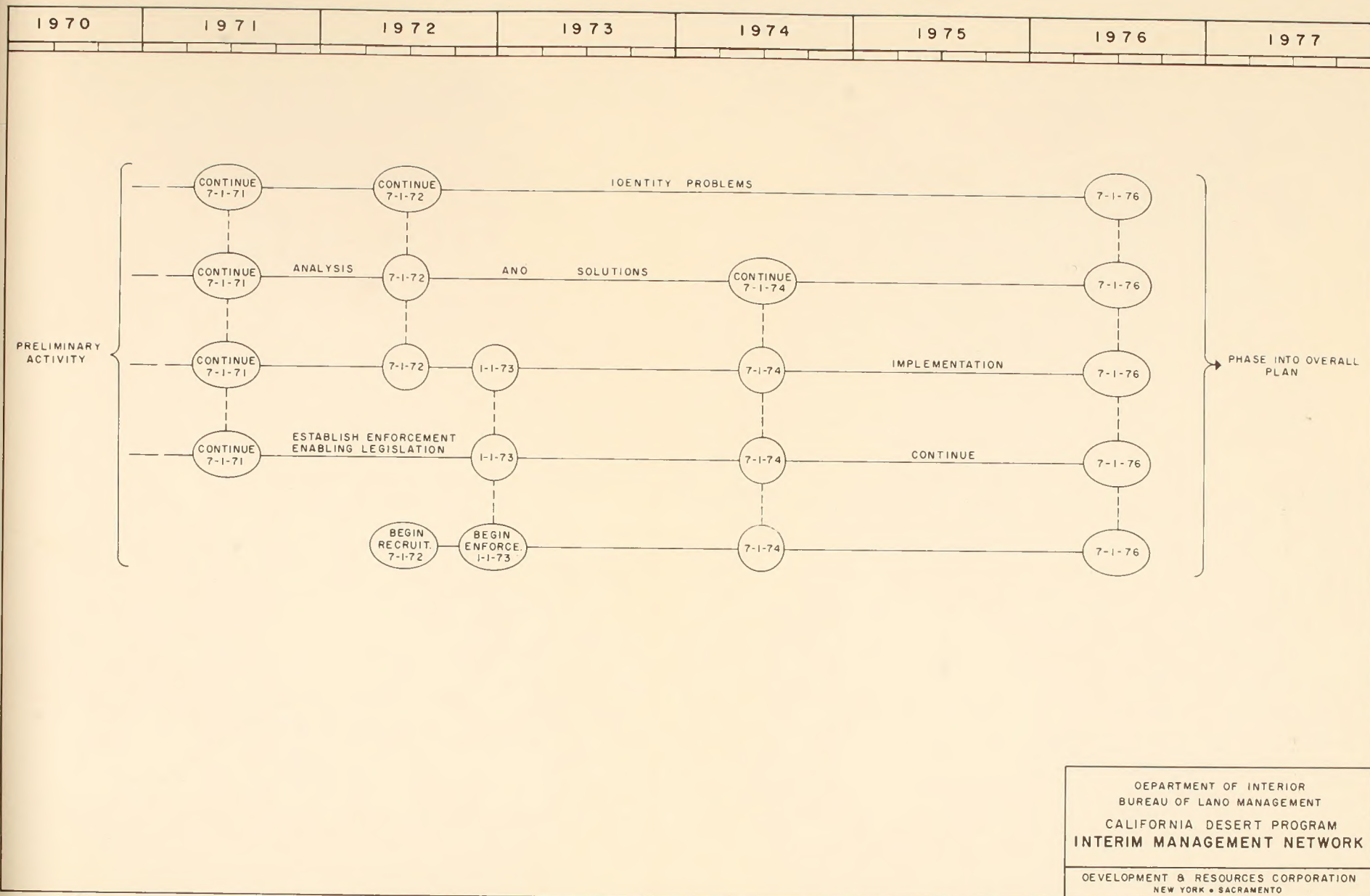


Figure 5

BUDGET SUMMARY

OPTIMIZED PLAN DEVELOPMENT

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Total</u>
Manpower	386, 200	1, 647, 600	1, 640, 800	1, 606, 800	1, 306, 500	559, 900	7, 147, 800
Direct Costs	309, 200	912, 400	944, 200	506, 200	251, 200	226, 200	3, 149, 400
Overhead	115, 900	494, 300	492, 200	482, 000	392, 000	168, 000	2, 144, 400
Subtotal	811, 300	3, 054, 300	3, 077, 200	2, 595, 000	1, 949, 700	954, 100	12, 441, 600

INTERIM MANAGEMENT

Manpower	254, 100	729, 600	1, 245, 100	1, 502, 700	1, 545, 000	1, 573, 800	6, 850, 300
Contracts and Direct Costs	843, 000	1, 625, 400	1, 821, 000	1, 429, 600	1, 052, 800	478, 800	7, 250, 600
Overhead	76, 200	218, 900	373, 500	450, 800	463, 500	472, 100	2, 055, 000
Subtotal	1, 173, 300	2, 573, 900	3, 439, 600	3, 383, 100	3, 061, 300	2, 524, 700	16, 155, 900
Total	1, 984, 600	5, 628, 200	6, 516, 800	5, 978, 100	5, 011, 000	3, 478, 800	28, 597, 500

MANPOWER AND COSTS

OPTIMIZED PLAN DEVELOPMENT

	Unit Cost Per Man-Month	1972		1973		1974		1975		1976		1977		Total
		Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	
Define Goals	1,700	2	3,400											3,400
Establish Objectives	1,700	3	5,100	2	3,400	2	3,400							11,900
Establish Policy and Procedures	1,700	3	5,100	4	6,800									11,900
ADP Liaison	1,700	6	10,200	12	20,400	12	20,400	12	20,400	12	20,400	12	20,400	112,200
Establish Criteria	1,700	20	34,000	20	34,000	3	5,100	3	5,100					78,200
Aerial Photos and Maps														
Photogrametrist	1,700	3	5,100	3	5,100	3	5,100	3	5,100	3	5,100			20,400
Cartographers	700	36	25,200	36	25,200	36	25,200	36	25,200	33	23,100			98,700
Cadastral	1,700	18	30,600	36	61,200	18	30,600							122,400
Inventory, Data Analyses and Plan Development														
BLM Staff (Technical Specialists)	1,700	52	88,400	373	634,100	382	652,800	402	683,400	297	504,900	144	244,800	2,808,400
BLM Staff (Scientific Support)	1,000			60	60,000	60	60,000	60	60,000	60	60,000			240,000
Consulting Staff	3,000	20	60,000	158	474,000	158	474,000	158	474,000	124	372,000	20	60,000	1,914,000
Establish Unit Boundaries	1,700			6	10,200	18	30,600							40,800
Study Management Staff	2,200	15	33,000	24	52,800	24	52,800	24	52,800	24	52,800	24	52,800	297,000
Administration Staff														
Specialists	1,300	30	39,000	48	62,400	48	62,400	48	62,400	48	62,400	24	31,200	319,800
Clerical	600	78	46,800	228	136,800	228	136,800	228	136,800	207	124,200	132	79,200	660,600
Information, Education and Technical Writers	1,700	18	30,600	36	61,200	48	81,600	48	81,600	48	81,600	42	71,500	408,100
Subtotal (Manpower)			386,200		1,647,600		1,640,800		1,606,800		1,306,500		559,900	7,147,800
Overhead (30%)			115,900		494,300		492,200		482,000		392,000		168,000	2,144,400
Totals (Manpower)			502,100		2,141,900		2,133,000		2,088,800		1,698,500		727,900	9,292,200

DIRECT COSTS

OPTIMIZED PLAN DEVELOPMENT

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Total</u>
CONTRACTS - SERVICES							
Requiring Special Equipment							
ADP Program Services (Denver Service Center)	123,000	593,500	751,000	405,000	190,000	165,000	2,227,500
Archeological Exploration		20,000	15,000	15,000			50,000
Hydrogeological Exploration		75,000	50,000	25,000			150,000
Aerial Photo							
High Flight	100,000	70,000	30,000				100,000
Intermediate Flight							100,000
PROCUREMENT							
Aerial Photo							
High Flight (3 sets)	2,500	48,000	32,000				2,500
Intermediate Flight (3 sets)		5,000	5,000				80,000
Maps - Topographic							10,000
OFFICE - OPERATION AND MAINTENANCE							
Rent	30,000	40,000	40,000	40,000	40,000	40,000	230,000
Telephones	6,000	7,200	7,200	7,200	7,200	7,200	42,000
Office Equipment Maintenance	1,000	2,000	2,000	2,000	2,000	2,000	11,000
Office Supplies	2,000	2,000	2,000	2,000	2,000	2,000	12,000
Office Furniture and Equipment	39,700	39,700					79,400
Reproduction (Xerox)	5,000	10,000	10,000	10,000	10,000	10,000	55,000
TOTAL (DIRECT COSTS)	309,200	912,400	944,200	506,200	251,200	226,200	3,149,400

TABLE 3

BUDGET
INTERIM MANAGEMENT

	Unit Cost Per Man-Month	1972		1973		1974		1975		1976		1977	
		Man-	Cost	Man-	Cost	Man-	Cost	Man-	Cost	Man-	Cost	Man-	Cost
		Mos.		Mos.		Mos.		Mos.		Mos.		Mos.	
MANPOWER													
Natural Resources Specialists (Problem Areas)	1,700	66	112,200	126	214,200	189	321,300	192	326,400	192	326,400	192	326,400
Natural Resources Technicians (Temporary)	1,000			42	42,000	75	75,000	96	96,000	96	96,000	96	96,000
Engineering Specialists (Permanent)	1,700	12	20,400	30	51,000	45	76,500	57	96,900	60	102,000	60	102,000
Civil Engineer (Temporary)	1,500	30	45,000	57	85,500	60	90,000	36	54,000				
Technician (Temporary)	1,000			9	9,000	15	15,000	12	12,000	9	9,000	3	3,000
Communications Specialist	1,300	9	11,700	21	27,300	24	31,200	24	31,200	24	31,200	24	31,200
Natural Resources Specialists (Rangers)	1,400	42	58,800	186	260,400	384	553,600	546	764,400	600	840,000	600	840,000
Dispatchers	800	3	2,400	18	14,400	42	33,600	63	50,400	75	60,000	96	76,800
Clerks (Permanent)	600	6	3,600	33	19,800	69	41,400	99	59,400	114	68,400	144	86,400
Clerks (Temporary)	500			12	6,000	15	7,500	24	12,000	24	12,000	24	12,000
Subtotal (Manpower)			254,100		729,600		1,245,100		1,502,700		1,545,000		1,573,800
													6,850,300
CONTRACTS													
Way Stations													
Land Acquisition			160,000		160,000		60,000						380,000
Design and Construction			425,000		460,000		440,000		155,000		10,000		1,480,000
Furnishings and Exhibits			30,000		65,000		75,000		45,000				225,000
Desert Center													
Land Acquisition					60,000		500,000		800,000		875,000		500,000
Design and Construction							90,000						1,825,000
Furnishings and Exhibits											300,000		300,000
Problem Areas													
Construction			130,000		290,000		270,000		130,000		70,000		960,000
Consulting			15,000		20,000		15,000		8,000		3,000		61,000
Communications			29,000		25,000		25,000		25,000				104,000
Critical Recreation Site (Construction)			34,000		475,000		263,000		157,000				929,000
DIRECT COSTS													
Ranger Force Training			20,000		20,000		20,000		20,000				80,000
Way Stations Operation and Maintenance					2,400		6,000		9,600		10,800		39,600
Desert Center Operation and Maintenance											10,000		10,000
Critical Recreation Site Operation and Maintenance					48,000		57,000		80,000		84,000		357,000
Subtotal (Contracts and Direct Costs)			843,000		1,625,400		1,821,000		1,429,600		1,052,800		7,250,600
Overhead (30% of Manpower)			76,200		218,900		373,500		450,800		463,500		2,055,000
Totals (Interim Management)			1,173,300		2,573,900		3,439,600		3,383,100		3,061,300		16,155,900

* Multiple duty as Ranger and Resources Specialist

BUDGET SUMMARY

EXTENDED PLAN DEVELOPMENT

	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
Manpower	297,300	1,177,800	1,147,200	1,116,600	1,116,600	1,116,600	1,116,600	858,900	467,400	8,415,000
Direct Costs	294,500	761,000	746,000	457,000	346,000	304,000	287,000	201,000	176,000	3,572,500
Overhead	89,200	353,300	344,200	335,000	335,000	335,000	335,000	257,700	140,200	2,524,600
Totals	681,000	2,292,100	2,237,400	1,908,600	1,797,600	1,755,600	1,738,600	1,317,600	783,600	14,512,100

MANPOWER AND COSTS																				
EXTENDED PLAN DEVELOPMENT																				
	Unit Cost Per Man-Month	1972		1973		1974		1975		1976		1977		1978		1979		1980		Total
		Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	Man- Mos.	Cost	
Define Goals	1,700	2	3,400																	3,400
Establish Objectives	1,700	3	5,100	2	3,400	2	3,400													11,900
Establish Policy and Procedures	1,700	3	5,100	4	6,800															11,900
ADP Program Liaison	1,700	6	10,200	12	20,400	12	20,400	12	20,400	12	20,400	12	20,400	12	20,400	12	20,400	12	20,400	173,400
Establish Criteria	1,700	20	34,000	20	34,000	3	5,100	3	5,100											78,200
Aerial Photos and Maps																				
Photogrametrist	1,700			3	5,100	3	5,100	3	5,100	3	5,100	3	5,100	3	5,100	3	5,100			35,700
Cartographers	700			24	16,800	24	16,800	24	16,800	24	16,800	24	16,800	24	16,800	24	16,800	12	8,400	126,000
Cadastral	1,700	18	30,600	36	61,200	18	30,600													122,400
Inventory, Data Analyses and Plan Development																				
BLM Staff (Technical Specialists)	1,700	20	34,000	229	389,300	238	404,600	258	438,600	261	443,700	261	443,700	261	443,700	162	275,400	120	204,000	3,077,000
BLM Staff (Scientific Support)	1,000			48	48,000	48	48,000	48	48,000	48	48,000	48	48,000	48	48,000	48	48,000			336,000
Consulting Staff	3,000	14	42,000	108	324,000	108	324,000	108	324,000	108	324,000	108	324,000	108	324,000	80	240,000	14	42,000	2,268,000
Establish Unit Boundaries	1,700			6	10,200	18	30,600													40,800
Study Management Staff	2,200	15	33,000	24	52,800	24	52,800	24	52,800	24	52,800	24	52,800	24	52,800	24	52,800	24	52,800	455,400
Administration Staff																				
Specialists	1,300	27	35,100	36	43,800	36	43,800	36	43,800	36	43,800	36	43,800	36	43,800	36	43,800	24	31,200	372,900
Clerical	600	57	34,200	168	100,800	168	100,800	168	100,800	168	100,800	168	100,800	168	100,800	159	95,400	96	57,600	792,000
Information, Education and Technical Writers	1,700	18	30,600	36	61,200	36	61,200	36	61,200	36	61,200	36	61,200	36	61,200	36	61,200	30	51,000	510,000
Subtotal (Manpower)			297,300		1,177,800		1,147,200		1,116,600		1,116,600		1,116,600		1,116,600		858,900		467,400	8,415,000
Overhead (30%)			89,200		353,300		344,200		335,000		335,000		335,000		335,000		257,700		140,200	2,524,600
Totals (Manpower)			386,500		1,531,100		1,491,400		1,451,600		1,451,600		1,451,600		1,451,600		1,116,600		607,600	10,939,600

TABLE 6

DIRECT COSTS

EXTENDED PLAN DEVELOPMENT

	1972	1973	1974	1975	1976	1977	1978	1979	1980	Total
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CONTRACTS - SERVICES

Requiring Special Equipment										
ADP Program Services										
(Denver Service Center)										
Archeological Exploration	120,000	490,000	571,000	374,000	263,000	251,000	239,000	153,000	128,000	2,589,000
Hydrogeological Exploration		15,000	10,000	10,000	10,000	5,000				50,000
Aerial Photo		50,000	50,000	25,000	25,000					150,000
High Flight	10,000									100,000
Intermediate Flight		70,000	30,000							100,000

PROCUREMENT

Aerial Photo										
High Flight (3 sets)	2,500									2,500
Intermediate Flight (3 sets)		48,000	32,000							80,000
Maps - Topographic		5,000	5,000							10,000

OFFICE - OPERATION AND MAINTENANCE

Rent	25,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	265,000
Telephones	5,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	53,000
Office Equipment Maintenance	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	17,000
Office Supplies	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	18,000
Office Furniture and Equipment	35,000	35,000								70,000
Reproduction (Xerox)	4,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	68,000

TOTAL (DIRECT COSTS)	294,500	761,000	746,000	457,000	346,000	304,000	287,000	201,000	176,000	3,572,500
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TABLE 7

QUARTERLY STAFFING SCHEDULE
(Permanent Staff)

OPTIMIZED PLAN DEVELOPMENT

	1972				1973				1974				1975				1976				1977			
Plan Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Assistant Plan Director	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natural Resources Planning Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Natural Resources Evaluation Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Technical Specialists	-	-	6	18	32	32	32	32	32	32	32	32	32	32	32	32	25	25	20	14	10	10	10	10
Scientific Support	-	-	-	-	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-
Cartographers	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	1	1
Cadastral	-	-	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
Administrative Specialist	1	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2
Stenographers and Clerks	1	4	9	12	19	19	19	19	19	19	19	19	19	19	19	18	18	17	16	15	15	7	7	7
Information Officer	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Education Officer	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Technical Writers	-	-	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Systems Analyst	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
State Director's and District Staff	-	1	2	2	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	2	2	2	2
Totals	2	11	32	47	79	79	79	79	80	80	77	77	77	77	77	68	68	62	53	39	39	30	30	30

TABLE 8

QUARTERLY STAFFING SCHEDULE
(Permanent Staff)

INTERIM MANAGEMENT

	1972			1973			1974			1975			1976			1977		
Natural Resources Specialists (Problem Areas)	2	6	7	7	9	11	11	11	12	14	14	14	15	16	16	16	16	16
Engineering Specialist	1	1	1	1	1	3	3	3	3	4	4	4	4	5	5	5	5	5
Communications Specialists	-	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Radio Dispatchers	-	-	-	1	1	1	1	3	3	3	3	5	5	5	6	6	8	8
Clerks	-	-	-	2	2	2	2	5	5	5	5	8	8	8	9	9	11	12
Natural Resource Specialists (Rangers)	1	1	6	6	11	11	20	20	28	28	36	36	44	44	47	47	50	50
State Director's and District Staff	-	1	1	1	1	2	2	2	3	3	3	3	4	4	4	5	5	5
Totals	4	10	16	19	26	32	41	46	56	59	67	72	82	84	87	90	93	98

QUARTERLY STAFFING SCHEDULE

EXTENDED PLAN DEVELOPMENT

	1972				1973				1974				1975				1976				1977				1978				1979				1980			
Plan Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Assistant Plan Director	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Natural Resources Planning Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Natural Resources Elevation Director	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Technical Specialists	-	-	4	12	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22				
Scientific Support	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				
Cartographers	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
Cadastral	-	-	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Administrative Specialist	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
Stenographers and Clerks	1	4	6	8	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14				
Information Officer	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Education Officer	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Technical Writers	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Computer Program Analyst	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
State Director's and District Staff	-	-	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2			
Totals	2	9	25	36	59	59	59	59	59	59	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56				

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